

Stormwater: Make the Connection

Monterey Regional Stormwater Management Program
(MRSWMP)

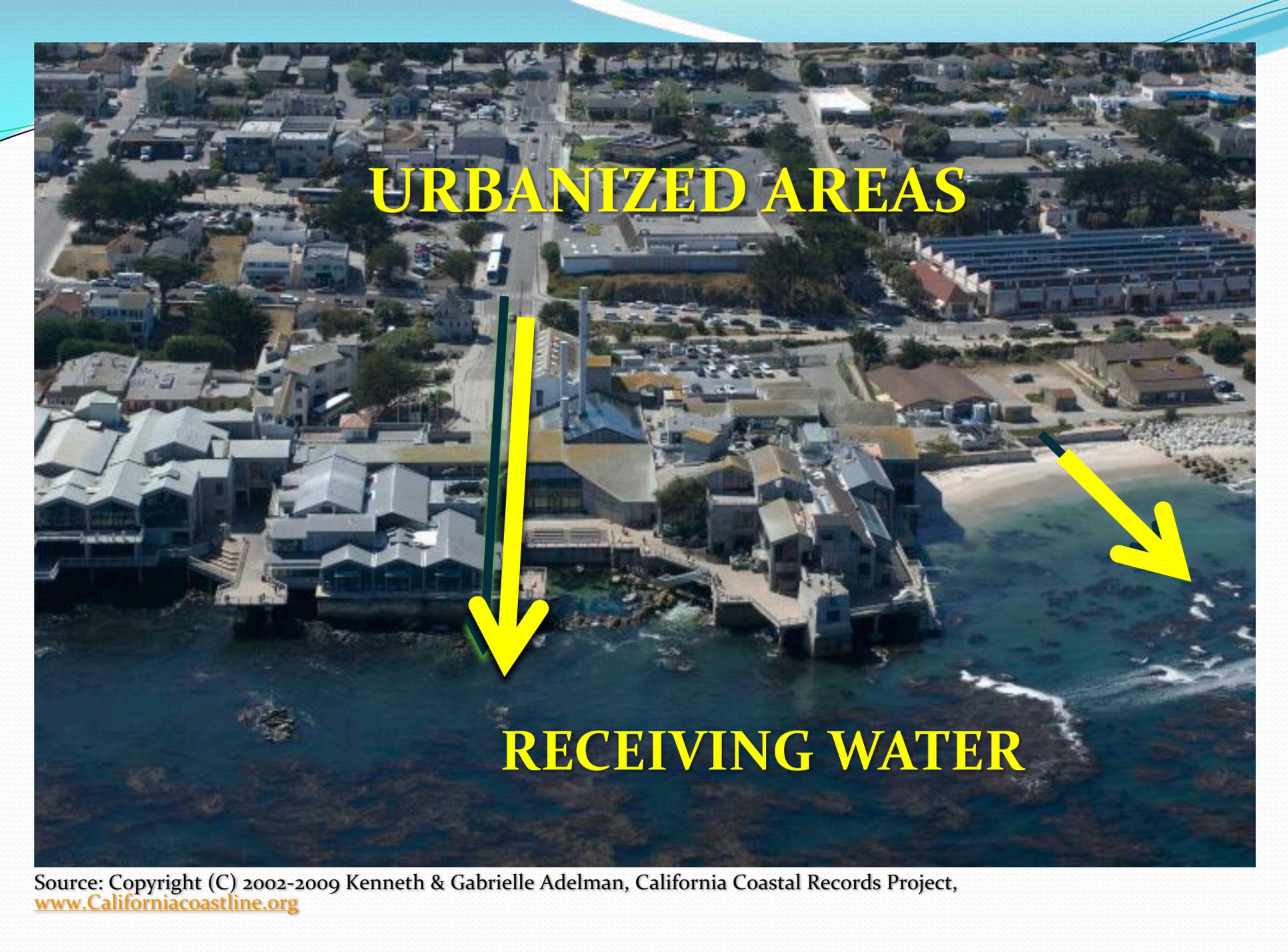
Jeff Condit

Rainfall on Natural Landscapes

- Natural, undisturbed soils – permeable or pervious
- Rainwater can soak in (infiltrate) and be stored
- Natural Vegetation – intercepts and uses rainwater for growth, process of evapotranspiration
- Vegetation and soil – capture, slow, spread, soak, store, filter, evaporate and use rainwater where it falls
 - Little to no overland flow
- Hydrologic Cycle

Rainfall on Urban Areas

- Impervious Surfaces – Roofs, streets, parking areas
 - Do not allow water to pass through them
- This rainwater flows faster and in greater amounts from these impervious surfaces
- Flows conveyed over parking lots, driveways, streets – these surfaces may contain pollutants that are picked up
- Surface flows – drain to creeks, underground pipes, and local waterways → Receiving water bodies



URBANIZED AREAS

RECEIVING WATER

What is Stormwater?

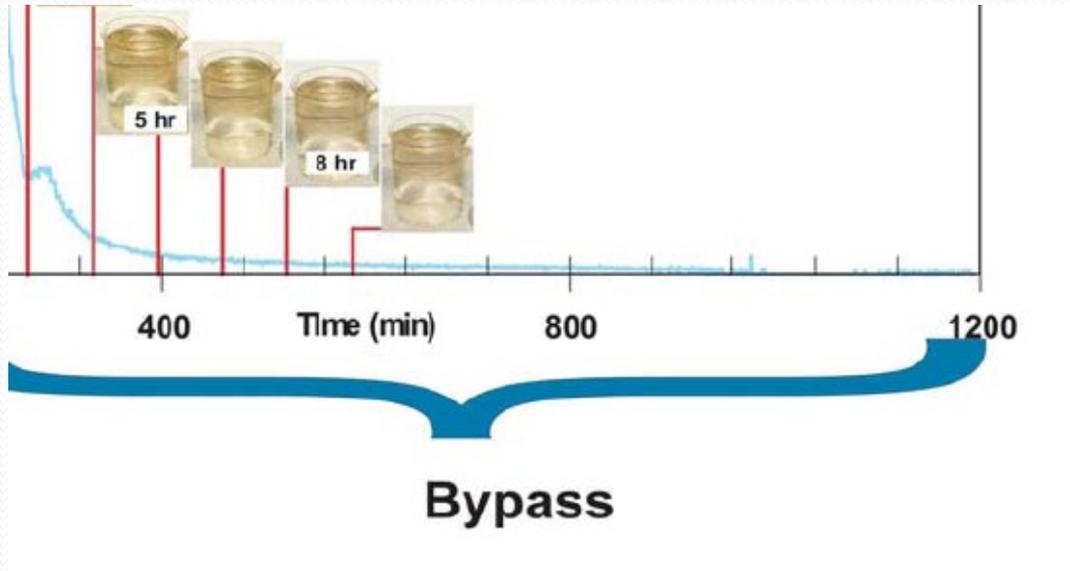
- Stormwater – Surface flow of water after rain has fallen to the ground
 - Runoff, Urban Runoff
- Stormwater Pollution – Stormwater picks up pollutants along its flow path
- Pollutants such as oil, antifreeze, trash, metals, sediment, pet waste, bacteria, soaps



Why does Stormwater Matter?

- Stormwater flows directly to local waterways, in most cases it is not treated
- Stormwater pollution can negatively impact local waterways / receiving water bodies
 - Trash and debris – harm wildlife and reduce aesthetic
 - Bacteria and other pathogens – health hazards and beach closures
 - Household/commercial hazardous wastes – Poison wildlife and people (contaminated water and seafood ingestion)
 - Sediment – harms aquatic habitat
 - Downstream erosion
 - Excess nutrients – Loss of oxygen

Urban Runoff – Water Quality

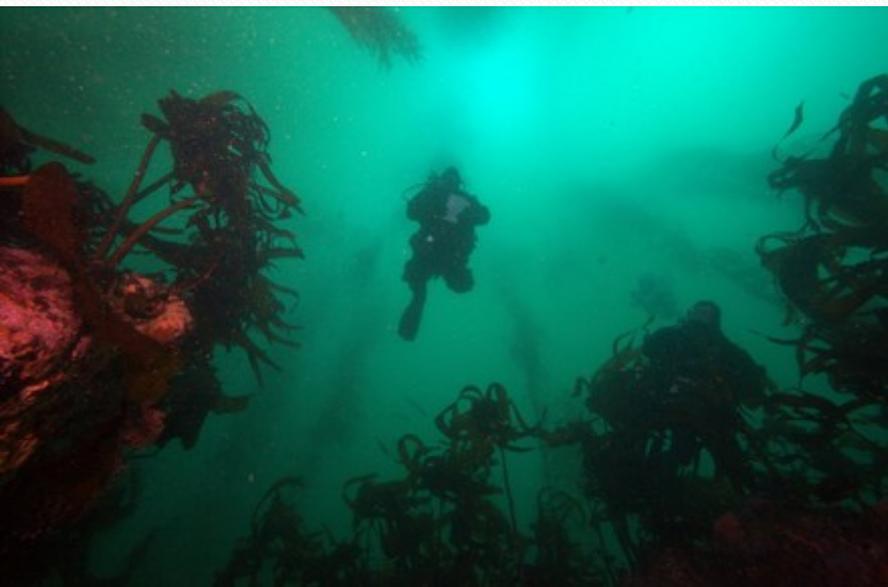




It matters to us!



It matters to them!





Stormwater is Regulated

- Porter–Cologne Water Quality Control Act (1969)
 - California Water Code, Division 7
 - Governs surface and groundwater quality
 - Point sources of pollution – sewage treatment and industrial sources
 - Model for Clean Water Act (1972)
- State & Regional Water Quality Control Boards
 - Planning authority including:
 - Establishing water quality objectives
 - Develop new programs to meet WQOs
 - Permitting authority
 - Enforcement authority

Stormwater is Regulated

- 1987: Clean Water Act Amended
 - Designated municipal stormwater runoff as a discrete pollution source
- 1990 National Pollutant Discharge Elimination System (NPDES) for Phase I Permit (*for Cities > 100,000*)
 - Created by U.S. EPA
 - Administered/Enforced by State Water Resources Control Board - 9 Regional Boards (1996)
- 1999: National Pollutant Discharge Elimination System (NPDES) for Phase II Permit (*for Cities < 100,000*)
 - MRSWMP is formed (2003)

Local Response

- Monterey Regional Stormwater Management Program:
 - Cities of Carmel, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside; County of Monterey
- Goals:
 - Mitigate Pollution – construction sites
 - Investigate/Enforce – Illegal Dumping
 - Educate/Inspect Businesses
 - Good Housekeeping Practices
 - Engage the Community, Promote Volunteerism
 - Stormwater sampling – First Flush
- www.MontereySEA.org

MS4 Permit Requirements: Public Education and Public Outreach



MS4 Permit Requirements: Public Education and Public Outreach



MS4 Permit Requirements: Public Education and Public Outreach



MS4 Permit Requirements: Public Education and Public Outreach



Fast Forward to 2014:

Post-Construction Requirements

- Over 5 years in the making
- Supersede statewide requirements
- Apply to first project approvals granted after March 6, 2014

➔ Low Impact Development

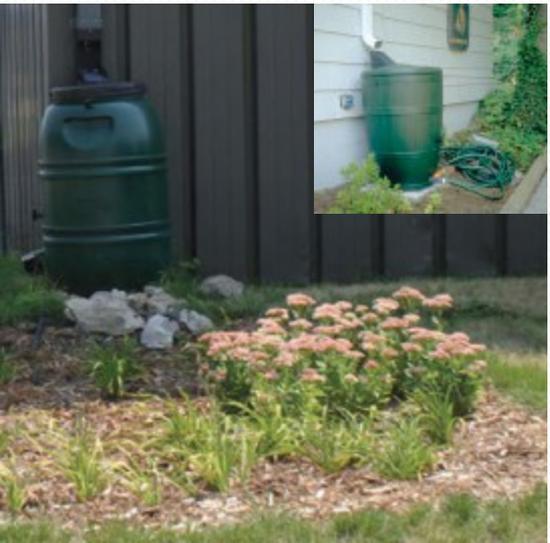
Low Impact Development

- LID is an alternative method of land development that seeks to maintain the natural hydrologic character of the site or region
 - Reduce storm flows from site
 - Capturing, storing, evaporating, and using water on-site
 - Managing/controlling storm water at its “source”
 - Minimize water quality impacts from urbanization

Low Impact Development



Photos source:
CASQA, EWRI, ASCE



Green Streets



Next Frontiers for Stormwater

- Trash Amendment
- Stormwater Resource Plan
- ASBS Compliance Plans

Trash Amendment

SIMPLE TIPS
TO HELP OUR OCEAN

- Keep trash, dog waste, cigarette butts off the streets and out of storm drains
- Recycle at your home, business and school
- Cut up six-pack rings to keep wildlife safe

www.montereysea.org



trash 101



Stormwater Resource Plan

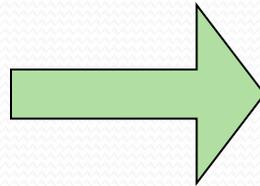
- Prop 1 Planning Grant (\$300,000)
- Prioritize Stormwater as a Resource per SB985





ASBS Compliance Plans

Stormwater



Make the connection!